Two New Predatory Mites (Acarina: Phytoseiinae) from Proteas in the Western Province.

by

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Nesbitt (1951) separated the genus *Garmania* from those mites of the genus *Typhlodromus* Scheuten having less than 19 pairs of setae on their dorsa. Characteristic of *Garmania* Nesbitt (in contrast to its subgenus *Paragarmania* Nesbitt) is the presence of a small anal plate bearing only three setae (Nesbitt, 1951). Two species of *Paragarmania* and four species of *Garmania* were partially re-described by Nesbitt: all of them were discovered and previously described by Oudemans.

Garmania vandenbergi sp. nov. (Figs. 1—4).

This new species was found by Miss Jeanette van den Berg (the species being named in honour of her) on the national wild flower of South Africa, the protea. Hundreds of these mites, which probably are predaceous on small phytophagous arthropods, were collected from the flowers of two different varieties of *Protea mellifera*. They were discovered about two weeks after these flowers were picked in the Grabouw district of the Western Province during July 1953.

Female (Figs. 1—2): Exclusive of the gnathosoma the female measures approximately 0.26 mm in breadth and 0.38 mm in length. The dorsum, which in entirely covered by the dorsal plate, bears 43 pairs of smooth setae. The pair at the rear margin is twice as long as the others, whereas the two between them are minute bristles. The pair of long setae may be very faintly serrate. One pair of marginal setae in the humeral position is distinctly longer and more conspicuous than the rest (except the hindmost bristles). The epistome is convex and, as far as could be determined, its margin is not serrate. Antero-dorsally the peritreme can be observed (Fig. 1).

The sternal plate bears 3 pairs of setae and has a mildly concave posterior margin. Its front margin shows a thickening on both sides of the base of the tritosternum. In some specimens this looks like a praecendopodal plate contiguous to the sternal plate. The two small metasternal plates bear one seta each. The epigynial plate with its slightly rounded posterior end carries a pair of bristles approximately on a level with the hind margin of the coxa

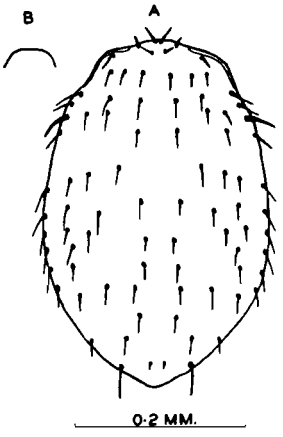

Fig 1.

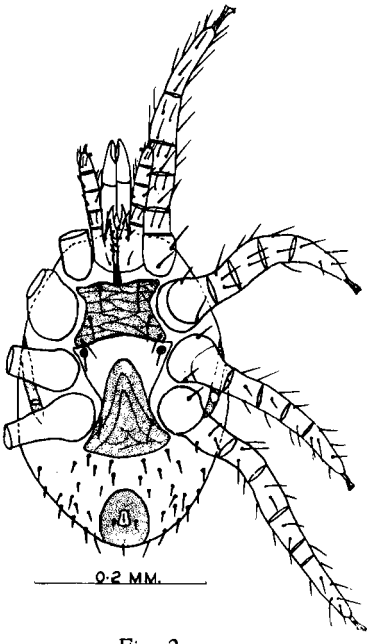

Fig. 2

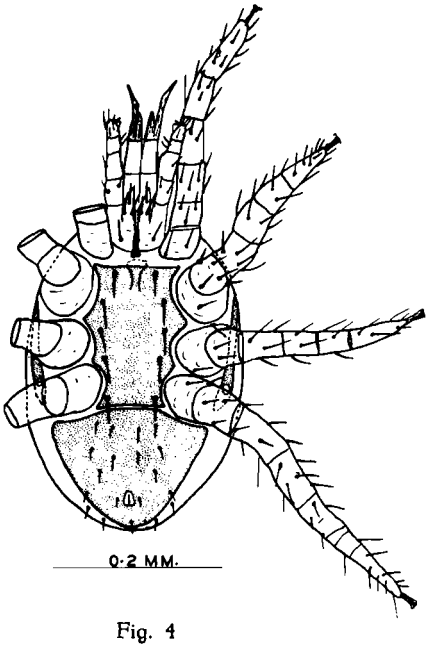

Fig. 4

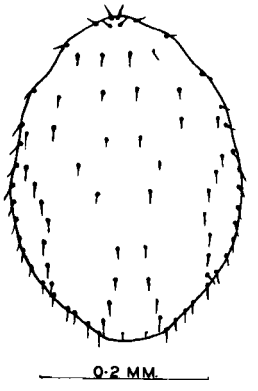

Fig. 3

of leg IV. Posterior to these the small round anal plate bears 3 setae and the interscutal membrane of the venter 16 pairs. The peritremal plate stretches to a position lateral to coxa IV. The fixed digit of each chelicera is multidentate and the movable digit tridentate, the latter teeth being caninelike and larger than the molar type of the former. There are no modified setae either on the body or extremities.

The female of *G.vandenbergi* differs from the other members of the genus in the number of dorsal and ventral setae, the absence of distinct wing-like expansions of the sternal plate as in *G.domestica* and the margin of the epistome not being denticulate (or with spines) as in *G.novaeguineae, G.bulbicola* and *G.pomorum*. It nearest relative seems to be *G.pomorum* as the anterior setae of the hypostome are no larger than the others and the chelicerae are without the mesial denticulate process which characterises *G.bulbicola*.

Male (Figs. 3—4): The only other known male of *Garmania* is *G.domestica* (Oudms.). Exclusive of the gnathosoma the male of *G.vandenbergi* measures approximately 0.38 mm in length and 0.26 mm in breadth. The ventral surface is similar to that of *G.domestica* and the species of *Typhlodromus*. It is covered by two large plates, the sterni-metasterni-genital plate bearing 5 pairs and the ventri-anal plate with 6 pairs of setae in addition to the 3 anal setae. The bristles of the ventri-anal plate are conspicuously shorter than the other setae. Lateral to the ventri-anal plate are two pairs of setae in the interscutal membrane. There are no metapodal plates as in *G.domestica*. The peritremal plates do not curve posteriorly behind coxae IV but they stretch a little further backwards than those of the female.

The fixed digits of the chelicerae have teeth but the movable digits are devoid of any. A prominent spermatophore is attached to the digitus mobilis. None of the setae on the legs are modified.

The dorsum has 41 pairs of setae of which two at the postero-dorsal margin are slightly longer than the others but shorter than those of the female. The front margin of the convex epistome appears to be very slightly serrate.

Garmania proteae sp. nov. (Figs. 5—6).

This species was collected from the flowers of *Protea barbigera* in Grabouw during December 1953. It closely resembles *Garmania vandenbergi*. The male could not be found.

Female: Exclusive of the gnathosoma it measures approximately 0.48 mm in length and 0.37 mm in width. The dorsum bears 50 pairs of setae, distributed as seen in fig. 5. The epistome is convex and sligtly indented

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Figs. 1 & 2: Female of *Garmania vandenbergi* sp. nov.: Fig. 1: A, Dorsum; B, Epistome. Fig. 2: Ventral view.

Figs. 3 & 4: Male of *Garmania vandenbergi* sp. nov.: Fig. 3: Dorsum; Fig. 4: Ventral view.

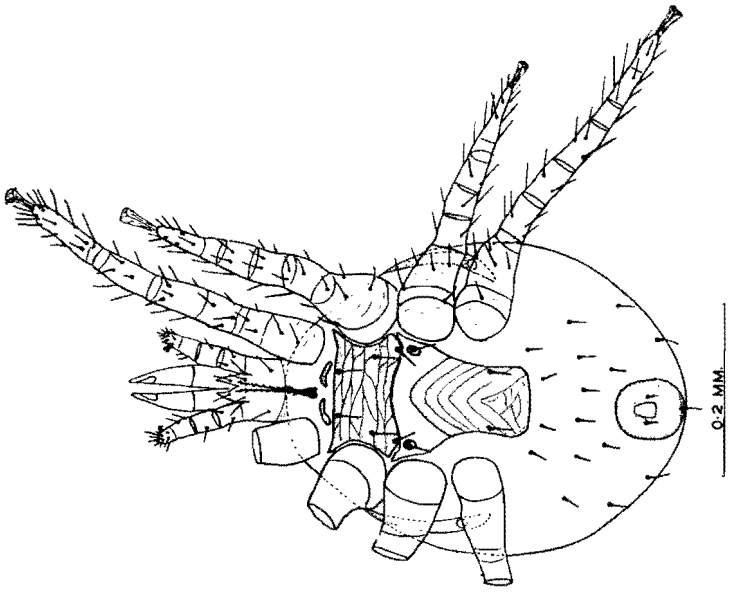

Fig. 6

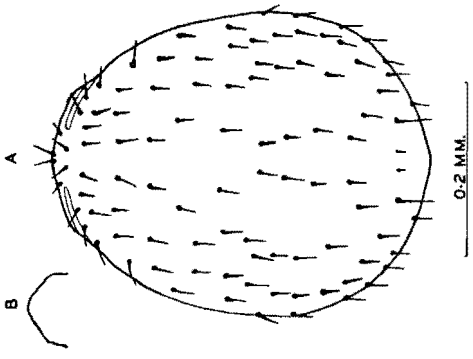

Fig. 5

laterally. The shapes and positions of the sternal, metasternal, epigynial, and anal plates are more or less the same as those of *G.vandenbergi*. Characteristic however of this species is the presence of two distinct praeendopodal plates flanking the base of the tritosternum. The interscutal membrane of the venter bears 8 pairs of setae.

The striking differences between *G.proteae* and *G.vandenbergi* are: The number of dorsal setae; the number of setae on the interscutal membrane of the venter; the presence of distinct praeendopodal plates in *G.proteae*, and the size of the body.

The presence of hundreds of these two new species of *Garmania* in the flowers of proteas is of great importance for the survival of these plants. This may well be one of the reasons why these proteas can be kept indoors for a long time in good condition. These mites are predacious on the small phytophagous invertebrates accumulating in the "basket" of the flower. It is important to note that they do not leave the flower after it has been picked. In a letter from Dr. R. F. Lawrence of the Natal Museum he mentioned the following about these mites: "They are often, I believe, found in large numbers on the heads of honey-birds and perhaps rely on them for transportation to fresh plants". This may well be the case because after putting your finger in the flower, hundreds of these mites swarm over your hand. They were present in every protea that was examined.

The holotypes and paratypes of both *G.vandenbergi* (8 ♀ ♀ and 6 ♂ ♂) and *G.proteae* (20 ♀ ♀) are in the museum of the Department of Zoology, Potchefstroom University, Potchefstroom.

REFERENCE:

NESBITT, H. H. J. (1951). A Taxonomic study of the Phytoseiinae (family Laelaptidae) Predaceous upon Tetranychidae of Economic Importance. Zool. Verh. Rijksmus. Nat. Hist. Leiden No. 12.

Figs. 5 & 6: Female of *Garmania proteae* sp. nov.: Fig. 5: A, Dorsum; B, Epistome. Fig. 6: Ventral view.